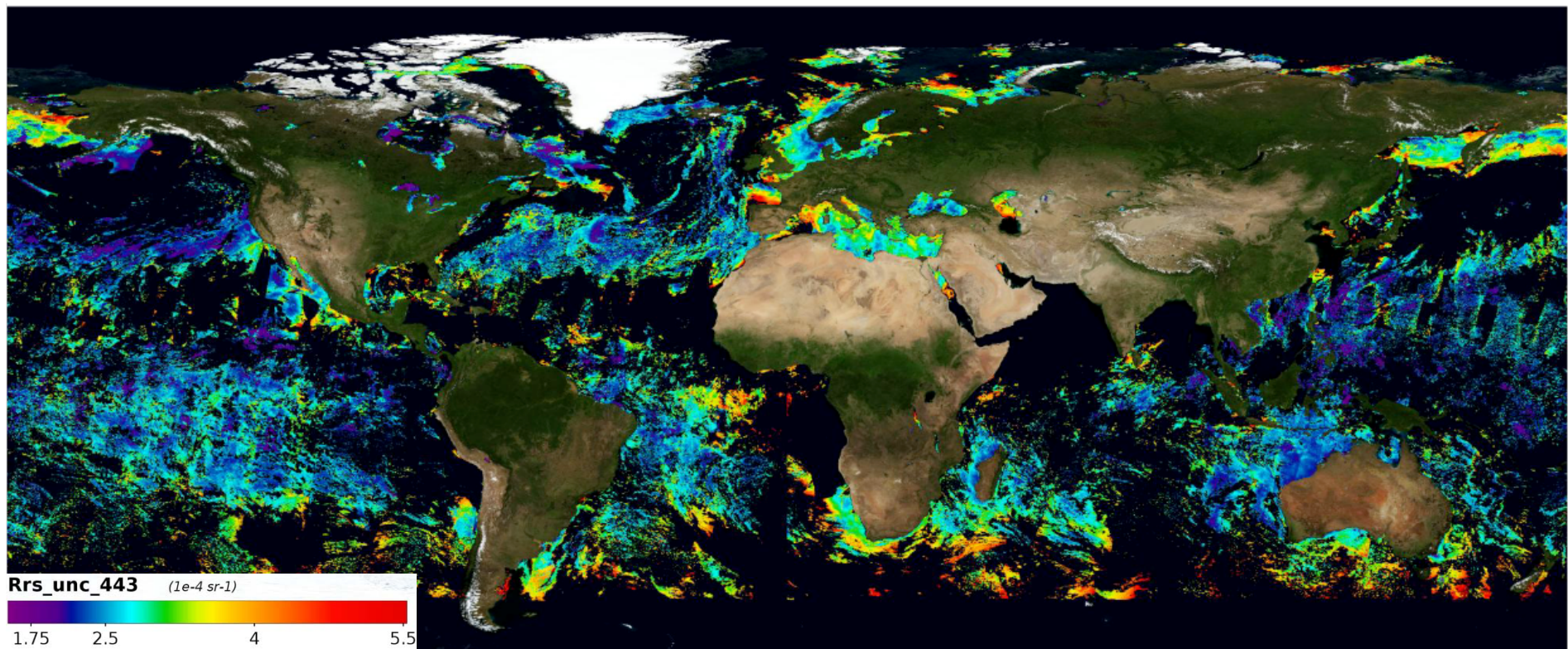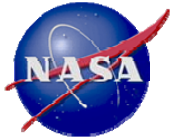# Calculating Remote Sensing Reflectance Uncertainties Using an Instrument Model Propagated Through Atmospheric Correction via Monte Carlo Simulations

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Rrs_unc_443   *(1e-4 sr-1)*

1.75   2.5   4   5.5

First attempt at quantifying uncertainties in ocean remote sensing reflectance satellite measurements. Based on 1000 iterations of Monte Carlo. Data source is a SeaWiFS 4-day composite, 2003. The uncertainty is for remote sensing reflectance (Rrs) at 443 nm.

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References:
New work

Data Sources: Remote sensing reflectance from SeaWiFS circa 2003. The same analysis can be applied to other sensors if a good instrument model is available.

Technical Description of Figure:
Figure 1: Global distribution of uncertainties Rrs at 443 nm. Date are from 4 day composite SeaWiFS collected in 2003.

Scientific significance, societal relevance, and relationships to future missions: This is the first attempt at a quantifying total uncertainties in global ocean color data sets. These uncertainties in Rrs will be propagated through the science algorithms to produce uncertainty estimates for ocean color products. The methods developed here can be applied to past, current, and future ocean color missions.